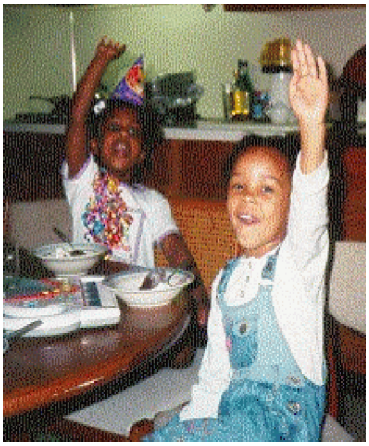
The Children's Healthline

communicating today's environmental problems to protect our children's future



The Dangers of Lead

It happened to their children...
don't let it happen to yours!

* *A young pregnant woman, her husband, and their two children moved into a big, old Victorian house in Bucks County, PA. Over the next several months they replaced windows and scraped or power-sanded the old walls and woodwork and, after a couple coats of paint, transformed it into their dream house. Unfortunately, however, they weren't well aware of the dangers of lead.*

Their dog became sick first. When the vet finally diagnosed it with lead poisoning, the rest of the family was tested. The parents and their 18-month-old daughter had very high lead levels, while their 3-year-old son's was moderately high. The family moved out immediately. Their daughter was hospitalized and had to undergo chelation therapy; after suffering from attention span problems, she's gradually getting better. The mother terminated her pregnancy after advice from her doctors. A state certified abatement firm had to be brought in to bring the dust down to a safe level before the family could move back.

* *Another tragic case involved parents who were both prominent physicians in the Baltimore area. As part of their do-it-yourself renovations on their century-old house they used a heat gun to remove paint from a number of doors, windows and baseboards. Unwittingly, lead fumes poisoned their children, ages 3 and 5, and left them with permanent brain damage. The heat gun had volatilized paint that contained 50% lead - not unusual in very old homes!*

Have you recently moved, undertaken home renovation or thinking about it?

If so, you may be putting your children at increased risk of lead poisoning. The leading cause of lead poisoning is exposure to lead dust from old paint. Because leaded-paint was not effectively banned until 1978, over 80% of all homes and apartments built before then contain it. And the older the building, the more likely it is to contain lead-based paint and a higher concentration of lead in the paint.

It doesn't take major renovation activities to create a lead exposure problem. Even the friction caused by painted surfaces rubbing together, such as opening and closing doors and raising and lowering window sashes, can create lead dust.

Most poisonings occur from exposure to paint that is failing due to poor maintenance.

Who's most at risk?

While the poor are disproportionately affected by lead poisoning, ***all children are at risk***. Very young children (under 6) and the unborn are at greatest risk, because their brains and nervous systems are undergoing the most rapid development and their systems absorb lead more quickly than adults. Children are easily exposed to lead paint hazards because they play on the floor or ground and frequently put things in their mouths, thereby ingesting or inhaling lead dust. Even the unborn are at risk, as pregnant mothers with elevated blood levels can pass the lead on to their babies, resulting in premature births, low birth weights, or even miscarriages**.**

Of all children in the Middle Atlantic States only about 7% have had their blood tested for lead and this rate is declining in many states.

How is lead dangerous?

Lead can harm children in many ways, including:

Decreased intelligence (IQ) scores
Learning disabilities, hyperactivity, attention deficit disorder, memory problems
Decreased growth, poor muscle coordination, muscle and joint pain
Impaired hearing

And ***at extremely high levels, lead poisoning in children can cause seizures, coma and death.***

What are other sources of lead?

Lead is a naturally-occurring metal found in the earth. It is also used by industry in many materials and products. Lead and its compounds can be found in all parts of the environment, including: air, drinking water, rivers and lakes, dust and soil, and plants and animals used for food. Because it typically cannot be seen, tasted or smelled, it is difficult to detect.

While deteriorated lead paint is the main source of childhood lead poisoning, other sources include soils contaminated from vehicle emissions before lead in gasoline was banned and drinking water (where plumbing contains lead). More rarely, children are exposed from lead that has leached into food or beverages that have been stored in certain imported ceramics that are high in lead content, folk remedies for treating ailments or making food more attractive, and various adult hobbies. Children may also be exposed if their caregivers or their parents work in certain jobs and bring lead dust home on their clothes, shoes, etc..

How can you protect your children?

If you suspect there is lead paint in your home (almost a certainty if the building is older than 1960 and common in homes built before 1978), keep the paint in good condition. ***Remember that intact lead paint is rarely a hazard.*** The problems arise when the old, lead-based paint is allowed to deteriorate or when the paint is disturbed, such as from repeated abrasion or during renovation activities. Places where paint is chipping and where painted surfaces (windows and doors) rub together to create lead flakes and dust, are the areas of most concern.

Unless you have a certificate from a certified lead inspector which states that the component you are renovating is lead free, always hire specially trained professionals for major renovation projects in houses built before 1978. And it's best for your family to vacate the home until a lab test has shown that clearance levels have been achieved. ***Should you conduct minor repairs to painted surfaces yourself, follow these precautions:***

Keep children and their toys away from work areas.
Seal off rooms and cover floors, furniture with plastic tarps to collect the paint and dust.
Spray surfaces with water to reduce dust. Never dry scrape or burn lead paint; instead, keep surfaces wet while scraping and wear a mask with a HEPA filter.
Don't dry sand lead paint unless using a sander equipped with a HEPA vacuum filter.
Upon completion, carefully dispose of tarps and then thoroughly mop the work area with soapy water, rinsing frequently and using a clean mop for the final cleaning.

HEPA (high efficiency particulate air) Special vacuums and dust masks equipped with HEPA filters are the best at removing lead dust. Vacuums equipped with fine particle bags, sometimes called micron or allergen bags, may work nearly as well.

Test your children. If your babies live or spend a lot of time in buildings built before 1978, have them tested by their first birthday and again around age two. If your children are ages 6 or younger and you suspect they may be at risk, have them tested.

No blood lead level is considered safe! The higher the level and the longer the exposure, the greater the health risk to the child.

Maintain your property or insist that your landlord repair damaged surfaces.

Wash hands frequently. Because lead gets into the body through ingestion and respiration, one of the best preventative measures is to see that your children frequently wash their hands, especially before eating or sleeping. Remember, lead dust typically cannot be seen!

Keep your home clean. If you live in an older home or apartment, keeping it lead-free is an important way to prevent lead poisoning. As ordinary dust may contain lead from deteriorated old paint, keep areas where children play as clean as possible. And the way you clean is just as important, for you want to avoid stirring up the dust. Always use a soapy, damp rag or mop or a

vacuum equipped with a HEPA filter. Sweeping, or vacuuming with ordinary filters, will not trap lead particles and will help spread the dust throughout the house. A regular vacuum will pick up some lead, but children should be out of the house during and for a couple hours after vacuuming. When wet mopping, use an all-purpose cleaner or one specifically made for lead removal and change the rinse water, rags, sponges or mops frequently. Use clean water and a clean sponge or rag for the final rinse. Wash pacifiers and bottles if they fall on the floor. Also, wash toys and stuffed animals regularly, as well as, window sills and crib surfaces.

Carpets and rugs have a tendency to trap lead dust and are almost impossible to clean; if deteriorated lead dust is a problem in your home, it's best to permanently remove them. If removal isn't possible, use a HEPA vacuum and clean under the rug as well as on top of it. Babies should be kept off carpets where lead dust has been a problem. Place them on a clean blanket instead.

Don't bring lead dust home. Lead is used in many industries and adults may, unknowingly, bring lead dust into the home on skin, hair and clothing. Jobs in construction, demolition of painted structures, radiator/vehicle repair, and those involved in working with stained glass, are among the high risk. Where possible, wash and change clothing before returning home. Make it a practice that your family cleans or removes their shoes when entering the home.

Keep your children from playing in dirt in areas where lead is suspect (most urban areas). Dirt, especially around the foundations of old buildings, often contains lead. Lead gets into the soil from deteriorating exterior paint, industrial emissions, and past use of leaded gasoline. Keep them on grass or use a sandbox instead.

Check your drinking water. The only way to know if your drinking water contains lead is to have it tested (call your local health department or water supplier for information on testing). When lead is detected it is almost always from the plumbing **inside** your house or apartment building; you may have lead pipes or lead solder. If it's not feasible to have the old plumbing replaced, you'll want to take precautions to minimize your children's lead exposure. Because hot water and water that has sat in pipes for a long time are more likely to contain lead, do not drink, cook or make baby formula with hot water. And with cold water, let it run for at least a minute before using it for drinking or cooking. **Be most cautious when making baby formula.**

Eat right Children who get enough iron, calcium and vitamin C in their diets will absorb less lead. Foods rich in iron include eggs, chicken, turkey, lean red meat, beans, greens and spinach, and raisins, nuts and seeds. Dairy products, greens, and kale are high in calcium. Vitamin C is found in oranges, grapefruits, strawberries, tomatoes, potatoes, greens and kale. Because foods high in fats and oils make it easier for the body to absorb lead, remove fat and skin from meat. Limit such foods as butter, oil, fried foods, sausage, bacon and scrapple in your children's diet.

Don't store food or beverages in lead crystal or imported or old pottery as these items may contain lead that can leach into the food. Don't heat foods in their cans nor store food in opened cans. Before planting a vegetable garden, make certain the soil isn't contaminated. If in doubt, have your soil tested first. If lead is present, purchase topsoil and make a raised garden.

Where can we get additional information?

lead poisoning and prevention:

www.epa.gov/lead
www.epa.gov/iaq/pubs/lead.html
www.atsdr.cdc.gov/ToxProfiles/phs8817.html
www.cdc.gov/nceh/programs/lead/guide/1997/docs/factlead.htm
National Lead Information Center 1-800-424-LEAD
EPA R3 lead program: contact Lew Malnak at (215) 814-2088, malnak.lewis@epa.gov
www.hud.gov/lea/leahome.html
www./aeclp.org/index.html

lead and nutrition:

www.leadsafe.org/Family/nutrition.htm
ericps.ed.uiuc.edu/cchp/factshet/leadnut.html

other:

EPA's safe drinking water hotline 1-800-426-4791

Sunscreen Update

In an earlier edition of Healthline we reported that sunscreen should never be applied to infants under 6 months. Recently, the American Academy of Pediatrics reversed its earlier position and now states that there is no evidence of sunscreen harming a baby's skin. However, avoiding sun exposure completely or dressing infants in protective clothing are still the Academy's top recommendations.

For more information on the Children's Environmental Health Program, contact either Gail Tindal at (215) 814-2069, tindal.gail@epa.gov or Dan Welker at (215) 814-2744, welker.dan@epa.gov